

## SEQUENCE LISTING

<110> Yamanouchi Pharmaceutical Co., Ltd.

<120> A novel potassium channel protein

<130> Y9903-PCT

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<150> JP P1998-011434

<151> 1998-01-23

<150> JP P1998-346198

<151> 1998-12-04

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<170> PatentIn Ver. 2.0

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gag	ctg	atc	ctg	tac	cgg	aag	agc	ggg	ctc	ccg	ttc	tgg	tgt	ctc	ctg	338
Glu	Leu	Ile	Leu	Tyr	Arg	Lys	Ser	Gly	Leu	Pro	Phe	Trp	Cys	Leu	Leu	
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Asp	Val	Ile	Pro	Ile	Lys	Asn	Glu	Lys	Gly	Glu	Val	Ala	Leu	Phe	Leu	
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Val	Ser	His	Lys	Asp	Ile	Ser	Glu	Thr	Lys	Asn	Arg	Gly	Gly	Pro	Asp	
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Arg	Trp	Lys	Glu	Thr	Gly	Gly	Gly	Arg	Arg	Arg	Tyr	Gly	Arg	Ala	Arg	
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Ser	Lys	Gly	Phe	Asn	Ala	Asn	Arg	Arg	Arg	Ser	Arg	Ala	Val	Leu	Tyr	
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His	Leu	Ser	Gly	His	Leu	Gln	Lys	Gln	Pro	Lys	Gly	Lys	His	Lys	Leu	
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aat	aag	ggg	gtg	ttt	ggg	gag	aaa	cca	aac	ttg	cct	gag	tac	aaa	gta	626
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Val	Thr	Val	Pro	Tyr	Ser	Val	Cys	Val	Ser	Thr	Ala	Arg	Glu	Pro	Ser	
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Ala Ala Arg Gly Pro Pro Ser Val Cys Asp Leu Ala Val Glu Val Leu	
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Thr Thr Trp Phe Leu Leu Asp Val Ile Ala Ala Leu Pro Phe Asp Leu	
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Tyr Ser Gln Tyr Ser Ala Val Val Leu Thr Leu Leu Met Ala Val Phe	
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Ala Leu Leu Ala His Trp Val Ala Cys Val Trp Phe Tyr Ile Gly Gln	
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Gln Glu Leu Ala Arg Arg Leu Glu Thr Pro Tyr Tyr Leu Val Gly Arg	
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 Ser Leu Pro Asp Glu Leu Arg Ala Asp Ile Ala Met His Leu His Lys  
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865 870 875	
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Lys Leu Arg Gln Ala Val Thr Glu Leu Ser Glu Gln Val Leu Gln Met	
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Pro His Arg Glu Gly Pro Cys Pro Arg Ala Ser Gly Glu Gly Pro Cys	
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Ala Ser Ser Tyr Cys Leu Gln Pro Pro Ala Gly Ser Val Leu Ser Gly	
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Thr Trp Pro His Pro Arg Pro Gly Pro Pro Pro Leu Met Ala Pro Trp	
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Pro Trp Gly Pro Pro Ala Ser Gln Ser Ser Pro Trp Pro Arg Ala Thr	
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Ala Phe Trp Thr Ser Thr Ser Asp Ser Glu Pro Pro Ala Ser Gly Asp	
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ctc tgc tct gag ccc agc acc cct gcc tcc cct cct cct tct gag gaa	3074
Leu Cys Ser Glu Pro Ser Thr Pro Ala Ser Pro Pro Pro Ser Glu Glu	
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Gly Ala Arg Thr Gly Pro Ala Glu Pro Val Ser Gln Ala Glu Ala Thr  
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Ser Thr Gly Glu Pro Pro Pro Gly Ser Gly Gly Leu Ala Leu Pro Trp  
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gac ccc cac agc ctg gag atg gtg ctt att ggc tgc cat ggc tct ggc 3218  
Asp Pro His Ser Leu Glu Met Val Leu Ile Gly Cys His Gly Ser Gly  
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Cys Ala Cys Ser Phe Leu Tyr Gly Pro Asp Thr Ser Glu Leu Val Arg  
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Gln Gln Ile Arg Lys Ala Leu Asp Glu His Lys Glu Phe Lys Ala Glu  
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Leu Ile Leu Tyr Arg Lys Ser Gly Leu Pro Phe Trp Cys Leu Leu Asp  
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Val Ile Pro Ile Lys Asn Glu Lys Gly Glu Val Ala Leu Phe Leu Val  
115 120 125

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Ser His Lys Asp Ile Ser Glu Thr Lys Asn Arg Gly Gly Pro Asp Arg  
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Trp Lys Glu Thr Gly Gly Gly Arg Arg Arg Tyr Gly Arg Ala Arg Ser  
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Lys Gly Val Phe Gly Glu Lys Pro Asn Leu Pro Glu Tyr Lys Val Ala  
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Ala Ile Arg Lys Ser Pro Phe Ile Leu Leu His Cys Gly Ala Leu Arg  
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Ala Thr Trp Asp Gly Phe Ile Leu Leu Ala Thr Leu Tyr Val Ala Val  
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Ile Leu Asp Ile Val Leu Asn Phe Arg Thr Thr Phe Val Ser Lys Ser  
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Gly Gln Val Val Phe Ala Pro Lys Ser Ile Cys Leu His Tyr Val Thr  
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Thr Trp Phe Leu Leu Asp Val Ile Ala Ala Leu Pro Phe Asp Leu Leu  
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His Ala Phe Lys Val Asn Val Tyr Phe Gly Ala His Leu Leu Lys Thr  
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Val Arg Leu Leu Arg Leu Leu Arg Leu Leu Pro Arg Leu Asp Arg Tyr  
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Ser Gln Tyr Ser Ala Val Val Leu Thr Leu Leu Met Ala Val Phe Ala  
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Leu Leu Ala His Trp Val Ala Cys Val Trp Phe Tyr Ile Gly Gln Arg  
370 375 380



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Glu Leu Ala Arg Arg Leu Glu Thr Pro Tyr Tyr Leu Val Gly Arg Arg  
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Ser Glu Ala Asn Gly Thr Gly Leu Glu Leu Leu Gly Gly Pro Ser Leu  
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Arg Ser Ala Tyr Ile Thr Ser Leu Tyr Phe Ala Leu Ser Ser Leu Thr  
450 455 460

Ser Val Gly Phe Gly Asn Val Ser Ala Asn Thr Asp Thr Glu Lys Ile  
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Phe Ser Ile Cys Thr Met Leu Ile Gly Ala Leu Met His Ala Val Val  
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Phe Gly Asn Val Thr Ala Ile Ile Gln Arg Met Tyr Ala Arg Arg Phe  
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Leu Tyr His Ser Arg Thr Arg Asp Leu Arg Asp Tyr Ile Arg Ile His  
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Arg Ile Pro Lys Pro Leu Lys Gln Arg Met Leu Glu Tyr Phe Gln Ala  
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Thr Trp Ala Val Asn Asn Gly Ile Asp Thr Thr Glu Leu Leu Gln Ser  
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Leu Pro Asp Glu Leu Arg Ala Asp Ile Ala Met His Leu His Lys Glu  
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Val Leu Gln Leu Pro Leu Phe Glu Ala Ala Ser Arg Gly Cys Leu Arg  
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Ala Leu Ser Leu Ala Leu Arg Pro Ala Phe Cys Thr Pro Gly Glu Tyr  
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Leu Ile His Gln Gly Asp Ala Leu Gln Ala Leu Tyr Phe Val Cys Ser  
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Gly Ser Met Glu Val Leu Lys Gly Gly Thr Val Leu Ala Ile Leu Gly  
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Lys Gly Asp Leu Ile Gly Cys Glu Leu Pro Arg Arg Glu Gln Val Val  
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Lys Ala Asn Ala Asp Val Lys Gly Leu Thr Tyr Cys Val Leu Gln Cys  
660 665 670

Leu Gln Leu Ala Gly Leu His Asp Ser Leu Ala Leu Tyr Pro Glu Phe  
675 680 685

Ala Pro Arg Phe Ser Arg Gly Leu Arg Gly Glu Leu Ser Tyr Asn Leu  
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Gly Ala Gly Gly Gly Ser Ala Glu Val Asp Thr Ser Ser Leu Ser Gly  
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Asp Asn Thr Leu Met Ser Thr Leu Glu Glu Lys Glu Thr Asp Gly Glu  
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Gln Gly Pro Thr Val Ser Pro Ala Pro Ala Asp Glu Pro Ser Ser Pro  
740 745 750

Leu Leu Ser Pro Gly Cys Thr Ser Ser Ser Ser Ala Ala Lys Leu Leu  
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Ser Pro Arg Arg Thr Ala Pro Arg Pro Arg Leu Gly Gly Arg Gly Arg  
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Pro Gly Arg Ala Gly Ala Leu Lys Ala Glu Ala Gly Pro Ser Ala Pro  
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820 825 830

Gly Ser Asp Gln Pro Lys Phe Ser Phe Arg Val Gly Gln Ser Gly Pro  
835 840 845

Glu Cys Ser Ser Ser Pro Ser Pro Gly Pro Glu Ser Gly Leu Leu Thr  
850 855 860

Val Pro His Gly Pro Ser Glu Ala Arg Asn Thr Asp Thr Leu Asp Lys  
865 870 875 880

Leu Arg Gln Ala Val Thr Glu Leu Ser Glu Gln Val Leu Gln Met Arg  
885 890 895

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Glu Gly Leu Gln Ser Leu Arg Gln Ala Val Gln Leu Val Leu Ala Pro  
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His Arg Glu Gly Pro Cys Pro Arg Ala Ser Gly Glu Gly Pro Cys Pro  
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Ala Ser Thr Ser Gly Leu Leu Gln Pro Leu Cys Val Asp Thr Gly Ala  
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Ser Ser Tyr Cys Leu Gln Pro Pro Ala Gly Ser Val Leu Ser Gly Thr  
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Trp Pro His Pro Arg Pro Gly Pro Pro Pro Leu Met Ala Pro Trp Pro  
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Trp Gly Pro Pro Ala Ser Gln Ser Ser Pro Trp Pro Arg Ala Thr Ala  
980 985 990

Phe Trp Thr Ser Thr Ser Asp Ser Glu Pro Pro Ala Ser Gly Asp Leu  
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Cys Ser Glu Pro Ser Thr Pro Ala Ser Pro Pro Pro Ser Glu Glu Gly  
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Ala Arg Thr Gly Pro Ala Glu Pro Val Ser Gln Ala Glu Ala Thr Ser  
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Thr Gly Glu Pro Pro Pro Gly Ser Gly Gly Leu Ala Leu Pro Trp Asp  
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gac acc atc gcc acc cgt ttt gac gga acg cac agc aac ttc ctg ctg 96  
Asp Thr Ile Ala Thr Arg Phe Asp Gly Thr His Ser Asn Phe Leu Leu  
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gcc aac gca cag ggc aca cgg ggc ttt ccc atc gtc tac tgc tcc gac 144  
Ala Asn Ala Gln Gly Thr Arg Gly Phe Pro Ile Val Tyr Cys Ser Asp  
35 40 45  
ggc ttc tgc gag ctc aca ggc tac ggt cgc acc gag gtc atg cag aag 192  
Gly Phe Cys Glu Leu Thr Gly Tyr Gly Arg Thr Glu Val Met Gln Lys  
50 55 60  
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Thr Cys Ser Cys Arg Phe Leu Tyr Gly Pro Glu Thr Ser Glu Pro Ala  
65 70 75  
ctg cag cgt ctg cac aaa gcc ctg gag ggc cac cag gag cac cgg gct 288  
Leu Gln Arg Leu His Lys Ala Leu Glu Gly His Gln Glu His Arg Ala  
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Glu Ile Cys Phe Tyr Arg Lys Asp Gly Ser Ala Phe Trp Cys Leu Leu	
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115	120 125
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Phe Ser Phe Lys Asp Ile Thr Gln Ser Gly Ser Pro Gly Leu Gly Pro	
130	135 140
caa gga ggc cgc ggg gac agt aat cac gaa aac tcc ctt ggt aga agg	480
Gln Gly Gly Arg Gly Asp Ser Asn His Glu Asn Ser Leu Gly Arg Arg	
145	150 155
gga gcc acc tgg aaa ttt cgg tct gcc aga aga cgg agc cgt act gtc	528
Gly Ala Thr Trp Lys Phe Arg Ser Ala Arg Arg Arg Ser Arg Thr Val	
160	165 170 175
cta cac cga ctg acc ggc cac ttt ggc cgc cgg ggc cag gga ggc atg	576
Leu His Arg Leu Thr Gly His Phe Gly Arg Arg Gly Gln Gly Gly Met	
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Val Ser Lys Ala Ile Trp Asp Gly Leu Ile Leu Leu Ala Thr Phe Tyr	
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Val Ala Val Thr Val Pro Tyr Asn Val Cys Phe Ser Gly Asp Asp Asp	
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acc ccc atc act tcg cga cac acc ctt gtc agc gac atc gcc gtg gaa	816
Thr Pro Ile Thr Ser Arg His Thr Leu Val Ser Asp Ile Ala Val Glu	
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Met Leu Phe Ile Leu Asp Ile Ile Leu Asn Phe Arg Thr Thr Tyr Val	
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 Trp Leu His Glu Leu Gly Lys Arg Leu Glu Val Pro Tyr Val Asn Gly  
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tcg gtg ggc ggc cca tca cgg cgc agc gcc tac atc gcg gca ctg tac 1296  
 Ser Val Gly Gly Pro Ser Arg Arg Ser Ala Tyr Ile Ala Ala Leu Tyr  
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ttc act cta agc agc ctc acc agt gtg ggc ttt ggc aac gtg tgt gcc 1344  
 Phe Thr Leu Ser Ser Leu Thr Ser Val Gly Phe Gly Asn Val Cys Ala  
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aac acc gac gcg gag aag atc ttc tcc atc tgc acg atg ctc ata ggc 1392  
 Asn Thr Asp Ala Glu Lys Ile Phe Ser Ile Cys Thr Met Leu Ile Gly  
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gcc ctg atg cac gct gtg gtg ttc ggg aac gtg aca gcc atc atc cag 1440  
 Ala Leu Met His Ala Val Val Phe Gly Asn Val Thr Ala Ile Ile Gln  
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cgc atg tac tcg cgc cgc tcg ctc tac cac agc cgc atg aag gac ctc 1488

Arg Met Tyr Ser Arg Arg Ser Leu Tyr His Ser Arg Met Lys Asp Leu	
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aag gac ttc atc cgt gtg cac cgc ctg ccg cgg ccg ctc aag cag cgc	1536
Lys Asp Phe Ile Arg Val His Arg Leu Pro Arg Pro Leu Lys Gln Arg	
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atg ctc gaa tac ttc cag acc acg tgg gcc gtc aac agc ggc atc gac	1584
Met Leu Glu Tyr Phe Gln Thr Thr Trp Ala Val Asn Ser Gly Ile Asp	
515	525
gcc aac gag tta ctg cgt gac ttc cca gac gag ctg aga gct gac att	1632
Ala Asn Glu Leu Leu Arg Asp Phe Pro Asp Glu Leu Arg Ala Asp Ile	
530	540
gct atg cac ctg aat cgg gag atc ctg cag ctg ccg ttg ttc ggg gca	1680
Ala Met His Leu Asn Arg Glu Ile Leu Gln Leu Pro Leu Phe Gly Ala	
545	555
gcg agc agg ggc tgc ctg cgg gcc cta tcg ctg cac atc aag acc tcg	1728
Ala Ser Arg Gly Cys Leu Arg Ala Leu Ser Leu His Ile Lys Thr Ser	
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ttc tgc gct ccg ggc gag tac ctg ttg cgc cgt ggg gat gcc ctg cag	1776
Phe Cys Ala Pro Gly Glu Tyr Leu Leu Arg Arg Gly Asp Ala Leu Gln	
580	590
gca cat tac tat gtc tgc tcc ggc tcg ctt gag gtg ctc cga gac aac	1824
Ala His Tyr Tyr Val Cys Ser Gly Ser Leu Glu Val Leu Arg Asp Asn	
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atg gtg ctg gcc atc ctg ggg aag ggg gac ctg att gga gca gat atc	1872
Met Val Leu Ala Ile Leu Gly Lys Gly Asp Leu Ile Gly Ala Asp Ile	
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Pro Glu Pro Gly Gln Glu Pro Gly Leu Gly Ala Asp Pro Asn Phe Val	
625	635
cta aag acc agt gct gat gtg aaa gct ctg acc tac tgt ggc ctg cag	1968
Leu Lys Thr Ser Ala Asp Val Lys Ala Leu Thr Tyr Cys Gly Leu Gln	
640	655
cag ctg agc agc cga ggg ctg gct gag gtc ctg agg ctc tat cct gag	2016
Gln Leu Ser Ser Arg Gly Leu Ala Glu Val Leu Arg Leu Tyr Pro Glu	
660	670
tat ggg gct gcc ttc cgg gct ggc ctg ccc cgg gac ctc acc ttc aac	2064

Tyr Gly Ala Ala Phe Arg Ala Gly Leu Pro Arg Asp Leu Thr Phe Asn	
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Leu Arg Gln Gly Ser Asp Thr Ser Gly Leu Ser Arg Phe Ser Arg Ser	
690 695 700	
cct cgc ctc tcc cag ccc cgc tca gaa agc ctc ggc tcc tcc tca gac	2160
Pro Arg Leu Ser Gln Pro Arg Ser Glu Ser Leu Gly Ser Ser Ser Asp	
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Lys Thr Leu Pro Ser Ile Thr Glu Ala Glu Ser Gly Ala Glu Pro Gly	
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Gly Gly Pro Arg Pro Arg Arg Pro Leu Leu Leu Pro Asn Leu Ser Pro	
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Ala Arg Pro Arg Gly Ser Leu Val Ser Leu Leu Gly Glu Glu Leu Pro	
755 760 765	
cca ttc tca gcc ctt gtc tcc tct cct tcc tta tcc cca tcc ctg tcc	2352
Pro Phe Ser Ala Leu Val Ser Ser Pro Ser Leu Ser Pro Ser Leu Ser	
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cct gcc ctg gct ggc cag ggc cac agt gcc tcc cct cac ggc ccc ccc	2400
Pro Ala Leu Ala Gly Gln Gly His Ser Ala Ser Pro His Gly Pro Pro	
785 790 795	
agg tgc tct gct gcc tgg aag ccc cct cag ctt ctc att ccc cca ctg	2448
Arg Cys Ser Ala Ala Trp Lys Pro Pro Gln Leu Leu Ile Pro Pro Leu	
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gga acc ttt gga cct ccg gac ctc agt ccc cgg ata gtg gat ggc att	2496
Gly Thr Phe Gly Pro Pro Asp Leu Ser Pro Arg Ile Val Asp Gly Ile	
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gag gac tct ggc agc aca gct gag gcc cct tca ttc cga ttc agc agg	2544
Glu Asp Ser Gly Ser Thr Ala Glu Ala Pro Ser Phe Arg Phe Ser Arg	
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agg cct gaa ctg cca agg ccc cgc tcc cag gcg ccc cct aca ggg acc	2592
Arg Pro Glu Leu Pro Arg Pro Arg Ser Gln Ala Pro Pro Thr Gly Thr	
850 855 860	
agg ccc agc cca gaa ttg gcc agt gag gct gag gag gtg aag gaa aag	2640



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Arg Pro Ser Pro Glu Leu Ala Ser Glu Ala Glu Glu Val Lys Glu Lys  
865 870 875

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Val Cys Arg Leu Asn Gln Glu Ile Ser Arg Leu Asn Gln Glu Val Ser  
880 885 890 895

cag ctt agc cgg gag ctg cgg cac atc atg ggc ctg ctg cag gcc agg 2736  
Gln Leu Ser Arg Glu Leu Arg His Ile Met Gly Leu Leu Gln Ala Arg  
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ctg ggt ccc cca ggc cac cca gca ggc tcc gct tgg acc cca gac cct 2784  
Leu Gly Pro Pro Gly His Pro Ala Gly Ser Ala Trp Thr Pro Asp Pro  
915 920 925

cct tgt cca cag ctg agg cca cca tgc ctc tct cct tgt gcg tcc aga 2832  
Pro Cys Pro Gln Leu Arg Pro Pro Cys Leu Ser Pro Cys Ala Ser Arg  
930 935 940

cca cca ccc agc ctc cag gat act acg ctt gct gaa gtt cac tgc cca 2880  
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945 950 955

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960 965 970 975

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Pro Ser Ile Leu Pro Pro Tyr Pro Ser Glu Pro Asp Pro Leu Gly Pro  
980 985 990

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Ser Pro Val Pro Glu Ala Ser Pro Pro Thr Pro Ser Leu Leu Arg His  
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<213> Homo sapiens

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Asn Ala Gln Gly Thr Arg Gly Phe Pro Ile Val Tyr Cys Ser Asp Gly  
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Phe Cys Glu Leu Thr Gly Tyr Gly Arg Thr Glu Val Met Gln Lys Thr  
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Cys Ser Cys Arg Phe Leu Tyr Gly Pro Glu Thr Ser Glu Pro Ala Leu  
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Gln Arg Leu His Lys Ala Leu Glu Gly His Gln Glu His Arg Ala Glu  
85 90 95

Ile Cys Phe Tyr Arg Lys Asp Gly Ser Ala Phe Trp Cys Leu Leu Asp  
100 105 110

Met Met Pro Ile Lys Asn Glu Met Gly Glu Val Val Leu Phe Leu Phe  
115 120 125

Ser Phe Lys Asp Ile Thr Gln Ser Gly Ser Pro Gly Leu Gly Pro Gln  
130 135 140

Gly Gly Arg Gly Asp Ser Asn His Glu Asn Ser Leu Gly Arg Arg Gly  
145 150 155 160

Ala Thr Trp Lys Phe Arg Ser Ala Arg Arg Arg Ser Arg Thr Val Leu  
165 170 175

His Arg Leu Thr Gly His Phe Gly Arg Arg Gly Gln Gly Gly Met Lys  
180 185 190

Ala Asn Asn Asn Val Phe Glu Pro Lys Pro Ser Val Pro Glu Tyr Lys  
195 200 205

Val Ala Ser Val Gly Gly Ser Arg Cys Leu Leu Leu His Tyr Ser Val  
210 215 220

Ser Lys Ala Ile Trp Asp Gly Leu Ile Leu Leu Ala Thr Phe Tyr Val  
225 230 235 240

Ala Val Thr Val Pro Tyr Asn Val Cys Phe Ser Gly Asp Asp Asp Thr  
245 250 255

Pro Ile Thr Ser Arg His Thr Leu Val Ser Asp Ile Ala Val Glu Met  
260 265 270

Leu Phe Ile Leu Asp Ile Ile Leu Asn Phe Arg Thr Thr Tyr Val Ser  
275 280 285

Gln Ser Gly Gln Val Ile Ser Ala Pro Arg Ser Ile Gly Leu His Tyr  
290 295 300

Leu Ala Thr Trp Phe Phe Ile Asp Leu Ile Ala Ala Leu Pro Phe Asp  
305 310 315 320

Leu Leu Tyr Ile Phe Asn Ile Thr Val Thr Ser Leu Val His Leu Leu  
325 330 335

Lys Thr Val Arg Leu Leu Arg Leu Leu Arg Leu Leu Gln Lys Leu Glu  
340 345 350

Arg Tyr Ser Gln Cys Ser Ala Val Val Leu Thr Leu Leu Met Ser Val  
355 360 365

Phe Ala Leu Leu Ala His Trp Met Ala Cys Ile Trp Tyr Val Ile Gly  
370 375 380

Arg Arg Glu Met Glu Ala Asn Asp Pro Leu Leu Trp Asp Ile Gly Trp  
385 390 395 400

Leu His Glu Leu Gly Lys Arg Leu Glu Val Pro Tyr Val Asn Gly Ser  
405 410 415

Val Gly Gly Pro Ser Arg Arg Ser Ala Tyr Ile Ala Ala Leu Tyr Phe  
420 425 430

Thr Leu Ser Ser Leu Thr Ser Val Gly Phe Gly Asn Val Cys Ala Asn  
435 440 445

Thr Asp Ala Glu Lys Ile Phe Ser Ile Cys Thr Met Leu Ile Gly Ala  
450 455 460

Leu Met His Ala Val Val Phe Gly Asn Val Thr Ala Ile Ile Gln Arg  
465 470 475 480

Met Tyr Ser Arg Arg Ser Leu Tyr His Ser Arg Met Lys Asp Leu Lys  
485 490 495

Asp Phe Ile Arg Val His Arg Leu Pro Arg Pro Leu Lys Gln Arg Met  
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Leu Glu Tyr Phe Gln Thr Thr Trp Ala Val Asn Ser Gly Ile Asp Ala  
515 520 525

Asn Glu Leu Leu Arg Asp Phe Pro Asp Glu Leu Arg Ala Asp Ile Ala  
 530 535 540

Met His Leu Asn Arg Glu Ile Leu Gln Leu Pro Leu Phe Gly Ala Ala  
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Ser Arg Gly Cys Leu Arg Ala Leu Ser Leu His Ile Lys Thr Ser Phe  
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Cys Ala Pro Gly Glu Tyr Leu Leu Arg Arg Gly Asp Ala Leu Gln Ala  
 580 585 590

His Tyr Tyr Val Cys Ser Gly Ser Leu Glu Val Leu Arg Asp Asn Met  
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Val Leu Ala Ile Leu Gly Lys Gly Asp Leu Ile Gly Ala Asp Ile Pro  
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Glu Pro Gly Gln Glu Pro Gly Leu Gly Ala Asp Pro Asn Phe Val Leu  
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Lys Thr Ser Ala Asp Val Lys Ala Leu Thr Tyr Cys Gly Leu Gln Gln  
 645 650 655

Leu Ser Ser Arg Gly Leu Ala Glu Val Leu Arg Leu Tyr Pro Glu Tyr  
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Gly Ala Ala Phe Arg Ala Gly Leu Pro Arg Asp Leu Thr Phe Asn Leu  
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Arg Gln Gly Ser Asp Thr Ser Gly Leu Ser Arg Phe Ser Arg Ser Pro  
 690 695 700

Arg Leu Ser Gln Pro Arg Ser Glu Ser Leu Gly Ser Ser Ser Asp Lys  
 705 710 715 720

Thr Leu Pro Ser Ile Thr Glu Ala Glu Ser Gly Ala Glu Pro Gly Gly  
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Gly Pro Arg Pro Arg Arg Pro Leu Leu Leu Pro Asn Leu Ser Pro Ala  
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Arg Pro Arg Gly Ser Leu Val Ser Leu Leu Gly Glu Glu Leu Pro Pro  
 755 760 765

Phe Ser Ala Leu Val Ser Ser Pro Ser Leu Ser Pro Ser Leu Ser Pro  
 770 775 780

Ala Leu Ala Gly Gln Gly His Ser Ala Ser Pro His Gly Pro Pro Arg  
785 790 795 800

Cys Ser Ala Ala Trp Lys Pro Pro Gln Leu Leu Ile Pro Pro Leu Gly  
805 810 815

Thr Phe Gly Pro Pro Asp Leu Ser Pro Arg Ile Val Asp Gly Ile Glu  
820 825 830

Asp Ser Gly Ser Thr Ala Glu Ala Pro Ser Phe Arg Phe Ser Arg Arg  
835 840 845

Pro Glu Leu Pro Arg Pro Arg Ser Gln Ala Pro Pro Thr Gly Thr Arg  
850 855 860

Pro Ser Pro Glu Leu Ala Ser Glu Ala Glu Glu Val Lys Glu Lys Val  
865 870 875 880

Cys Arg Leu Asn Gln Glu Ile Ser Arg Leu Asn Gln Glu Val Ser Gln  
885 890 895

Leu Ser Arg Glu Leu Arg His Ile Met Gly Leu Leu Gln Ala Arg Leu  
900 905 910

Gly Pro Pro Gly His Pro Ala Gly Ser Ala Trp Thr Pro Asp Pro Pro  
915 920 925

Cys Pro Gln Leu Arg Pro Pro Cys Leu Ser Pro Cys Ala Ser Arg Pro  
930 935 940

Pro Pro Ser Leu Gln Asp Thr Thr Leu Ala Glu Val His Cys Pro Ala  
945 950 955 960

Ser Val Gly Thr Met Glu Thr Gly Thr Ala Leu Leu Asp Leu Arg Pro  
965 970 975

Ser Ile Leu Pro Pro Tyr Pro Ser Glu Pro Asp Pro Leu Gly Pro Ser  
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